What is claimed:

1. A therapeutic system for the exercise of target paralyzed musculoskeletal complex groups comprising:

a rigid frame structure;

a stimulation device that is situated upon the rigid frame structure, wherein the stimulation device provides graded electrical stimulation to a target paralyzed musculoskeletal complex group in order to induce functional standing in a system operator, and further, has the capability to accumulate data that corresponds to the standing angle of the system operator within the system;

a passive restraint device that is attached to the rigid frame structure, wherein the passive restraint device is utilized to restrain an operator within the rigid frame structure and provide support to an operator in the event that functional electrically induced standing fails;

a force application device in communication with the stimulation device, wherein the force application device applies resistive force to the targeted paralyzed musculoskeletal complex group of the system operator;

a data storage system capable of storing various feedback data collected from the stimulation device and force application device;

a processor in communication with the stimulation device, the force application device and the data storage system via at least one communication channel, wherein the processor comprises one or more processing elements that are programmed or adapted to:

a) receive operator position/angle data from a sensor

b) receive resistive force feedback data from the force sensor device; and

c) transmit activation commands to the stimulation device.

2. The system of claim 1, wherein the processor performs the additional steps of:

d) controling resistive exercise through a mechanical resistive device under computer control;

e) interfacing the motion transmission device through a knee coupler; and

f) Portably logging of position/angle, force, velocity, acceleration, muscle work completed, bone loads, time, date, and duration of standing.

3. The system of claim 1, wherein the optimal stimulation of the paralyzed musculoskeletal complex group is accomplished by the system varying the frequency, intensity and duty cycle of the applied electrical stimulation.

4. The system of claim 1, wherein the feedback data comprises data representing the force, velocity and acceleration of the mechanical resistive device.

5. The system of claim 1, wherein the force application device applies a fixed resistive force to the targeted paralyzed musculoskeletal complex group of the system operator.

6. The system of claim 1, wherein the mechanical resistive systemapplies a variable resistive force to the targeted paralyzed musculoskeletal complex group of the system operator.

7. The system of claim 1, wherein the system allows for an operator to actively stand while being supported against a variable resistance provided by the mechanical resistive device and sensed by a force sensor)

8. The system of claim 1, wherein the rigid frame structure and passive restraint device comprise a standing wheelchair device.

9. The system of claim 8, wherein the standing wheelchair device has the capability to monitor force, chair angle, muscle work, and the duration of time that a system operator has been standing.

10. The system of claim 8, wherein the standing wheelchair device transmits the monitored data to the processor and the data is used to determine the percentage of a system operator's body weight that is being exerted through the system operator's extremities.

11. The system of claim 8, wherein the determined percentage of a operator's body weight that is being exerted through a system operator's extremities is used to determine the appropriate dosage of resistive load that should be exerted against the system operator's extremities in order to prevent bone loss.

12. A method for the utilizing a system for the exercise of target paralyzed musculoskeletal complex groups comprising the steps of:

providing passive standing support of a system operator in the event that an electrically activated muscle group fails or the electrical stimulation

system is not able to maintain the electrical stimulation of an electrically stimulated muscle group;

modulating the electrical stimulation activation of a paralyzed human muscle group in order to induce functional standing and optimal lower extremity loading;

determining an optimal muscle stimulation electrical activation method by utilizing force, velocity and acceleration feedback data accumulated from the system;

storing the position/angle, force, velocity and acceleration feedback data accumulated from the system.

13. A computer readable storage environment comprising one or more storage devices or media storing instructions that upon execution by a system processor cause the system process to manage and execute interactive profiles within a system in accordance with the method of claim 11.

14. A system for the exercise of paralyzed musculoskeletal groups comprising:

a means of supporting, positioning, and protecting the exercising subject as necessary or desirable such as to allow the target musculoskeletal complex to be targeted;

a means for producing and applying electrical muscle stimulation to the target musculature to produce graded muscle contraction as appropriate for a predetermined exercise mode and therapeutic goal;

a means of applying controlled mechanical resistance to resist the action of a muscle, thereby controlling the motion of the target musculoskeletal complex;

a means of producing integrated control of both a stimulating and resistance device to control the movement of the target musculoskeletal complex in the manner desired to produce a therapeutic exercise goal;

a means of monitoring and storing system feedback data and subsequently transmitting the data back to a client so that optimal stimulation may occur;

a means of monitoring and storing system feedback data and subsequently transmitting the data back to a client so that optimal daily skeletal bone loading may occur.

15. A therapeutic system for the exercise of target paralyzed musculoskeletal complex groups comprising:

a standing wheelchair device, wherein the standing wheelchair device is utilized to passively restrain, position and support a standing wheelchair operator;

a stimulation device, wherein the stimulation device provides graded electrical stimulation to a target paralyzed musculoskeletal complex group in order to induce active standing in a wheelchair operator;

a force sensing device that records and analyzes the axial and tangential loads that are exerted upon the skeletal system;

an angle or position sensor situated in contact with the standing wheelchair device in a manner such that the tilt sensor determines the standing angle of a system operator within the standing wheelchair device;

a data storage system capable of storing various feedback data collected from the standing wheelchair device;

a processor in communication with the standing wheelchair and the data storage system, wherein the processor comprises one or more processing elements that are programmed or adapted to:

a) receive operator position data from the tilt sensor;

b) receive force feedback data from the force sensing device;

c) transmit activation commands to the stimulation device;

a display device in communication with the processor, wherein data in regard to the amount of load placed on a standing wheelchair operator's extremities are displayed to the standing wheelchair operator.

16. The system of claim 15, wherein the optimal stimulation of the paralyzed musculoskeletal complex group is accomplished by the system varying the frequency, intensity and duty cycle of the applied electrical stimulation.

17. The system of claim 15, wherein the angle or position t sensor comprises an IC accelerometer, potentiometer, or other angle sensing device.

18. The system of claim 15, wherein angle or position and force data are periodically sampled and stored in a data storage system.

19. The system of claim 15, wherein the processor uses the position or angle and force data to determine the shear and comprehensive loads on a system operator's leg bones and transmits and displays this data to the operator at the operator console.

20. The system of claim 15, wherein the determined percentage of a operator's body weight that is being exerted through a system operator's extremities is used to determine the appropriate dosage of resistive load that should be exerted against the system operator's extremities in order to prevent bone loss.

21. The system of claim 15, wherein the integral of the muscle force-time curve is used to provide muscle work completion information to the system operator after an exercise session.

22. The system of claim 15, wherein the stimulation device is powered by a battery power source.

23. A system for the exercise of **non-paralyzed** musculoskeletal groups comprising:

a means of supporting, positioning, and protecting the exercising subject as necessary or desirable such as to allow the target musculoskeletal complex to be targeted;

a means of applying controlled mechanical resistance to resist the action of a muscle or muscles, thereby controlling the motion of the target musculoskeletal complex;

a means of teaching integrated control of both a volitional activation of muscles to control a joint or joints against a mechanical resistance device of the target musculoskeletal complex in the manner desired to produce a therapeutic exercise goal;

a means of monitoring, displaying, and storing system feedback data and subsequently transmitting the data back to a client so that performance of graded exercise tasks can be compared with a given prescribed exercise task.;

a processor in communication with the data storage system, wherein the processor comprises one or more processing elements that are programmed or adapted to:

a) receive operator position/angle data from the position sensor;

b) receive force feedback data from the force sensing device;

c) transmit prescribed movement patterns and adjust commands to the mechanical resistive device so that the operator must learn to control the joint against unpredictable perturbations.;